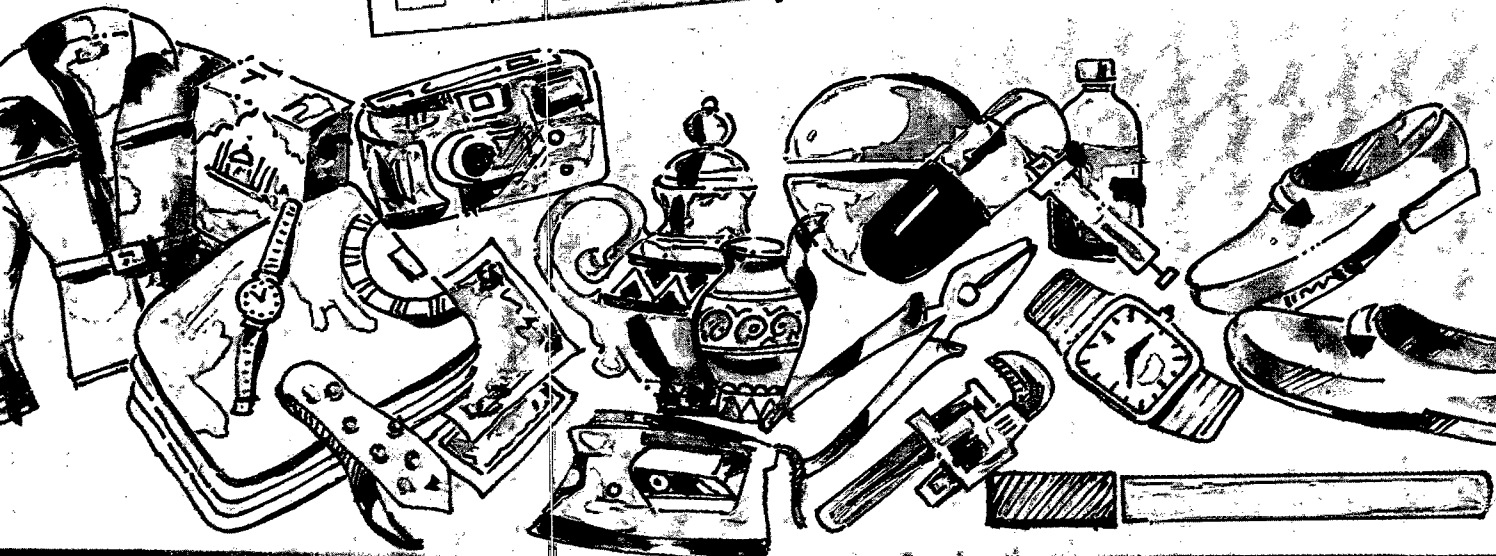
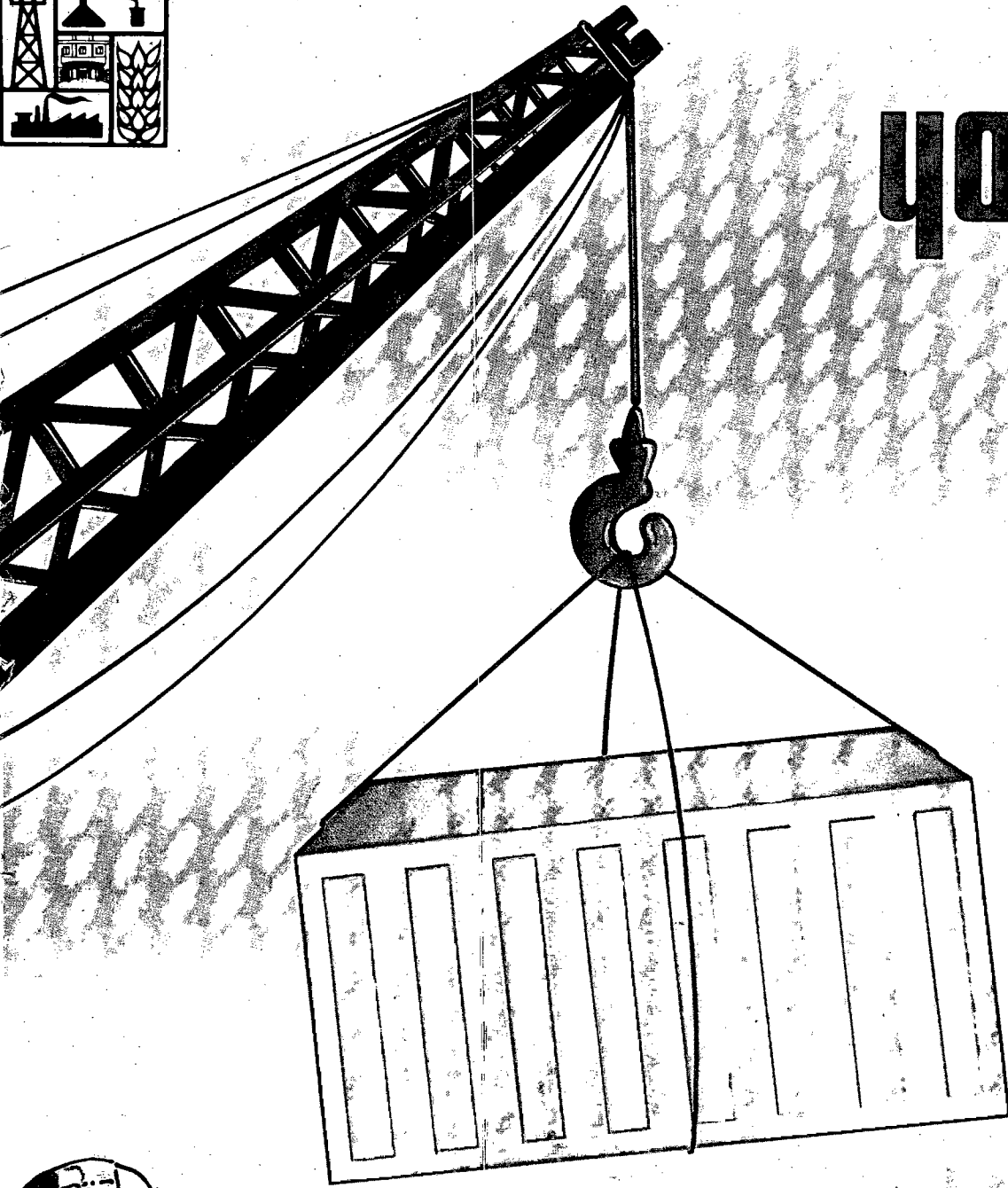




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Development Diary

Development Of Education In N. E.

The Government has asked all officers incharge of different divisions in the Department of Education, Ministry of Human Resource Development to visit North East at least twice during the current financial year. This is in pursuance of Prime Minister's initiative for the North East which envisages tours by officers of the Ministry so that the plans are drawn up on the basis of first hand information.

The Government's decision to make available Rs. seven crore to the North Eastern Council for the development of education in the region was announced recently at a meeting of Education Ministers held at Itanagar. The said amount will be contributed towards corpus of a fund, the interest of which would be used for bringing about qualitative improvements, innovations and other required modifications in the field of teachers education and for other educational needs in the primary, secondary and tertiary sectors of education in the seven states of the North Eastern region. Though the overall literacy rate of the region is higher than the national average of 52 per cent, much remains to be done to achieve total literacy in the region. There are areas with very high level of literacy like Mizoram and Nagaland and areas with a comparatively low literacy level like Arunachal Pradesh.

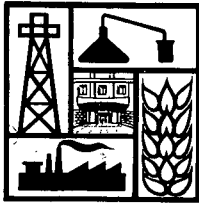
11 Lakh Wells Dug

Eleven lakh wells have been constructed across the country under the Million Wells Scheme (MWS) so far. MWS was being implemented as a sub scheme of Jawahar Rozgar Yojana but became an independent scheme on 1st January, 1996. Under

MWS minor irrigation schemes like dug wells, irrigation tanks and development of lands of small and marginal farmers belonging to the Scheduled Castes and Scheduled Tribes can be taken up. The Centre released Rs. 198.41 crore upto May-end this year for the scheme. The total funds available including the unspent balance is Rs. 421.16 crore. The States and Union Territories which registered a higher percentage of utilisation than the national average are Arunachal Pradesh, Assam, Bihar, Gujarat, Himachal Pradesh, Maharashtra, Orissa, Sikkim and Lakshadweep.

Tripartite Committee On Sugar

The Labour Ministry is to set up a Tripartite Industrial Committee for Sugar industry. The functions of the Committee will be to determine the wage structure, working conditions of the persons employed in the sugar industry and also to look into the other issues concerning the industry. It will function under the Chairmanship of the Union Labour Minister. It will comprise representatives of the State Governments of Uttar Pradesh, Tamil Nadu, Bihar, Maharashtra, Gujarat and Karnataka. The Central Government will be represented by Labour and Food Ministries. There will be also one representative each from Council of Indian Employers, All India Manufacturers Organisation, National Federation of Cooperative Sugar Factories Limited and Indian Sugar Mills Association. The workers group will be represented by Bharatiya Mazdoor Sangh, Indian National Trade Union Congress, Hind Mazdoor Sabha, Centre of Indian Trade Unions and National Sugar Workers Coordination Committee.



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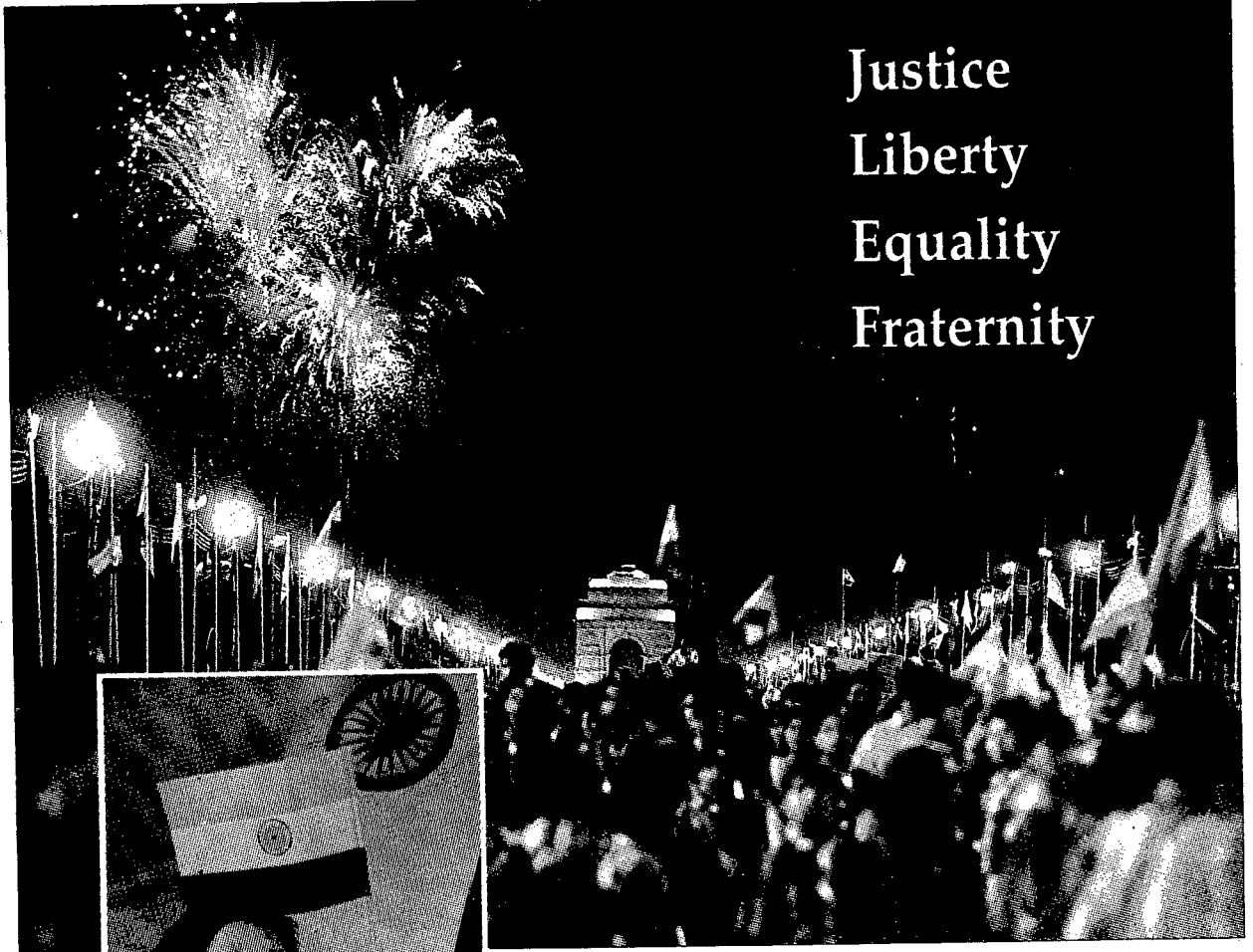
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- 5 ✓ FOREIGN TRADE: RETROSPECT AND PROSPECT
B. Bhattacharyya
- 9 MAKING THE ENTREPRENEURIAL SOCIETY
Prof. S.S. Khanka
- 12 LEATHER GARMENTS EXPORTS TOUCHING NEW HEIGHTS
Dr. Vijay Kumar
- 14 TEA: MEETING EXPORT CHALLENGES
Dr. Sanjib Roy
- 16 SPICES: PRESENT SCENE AND PROSPECTS
H.K. Bhattacharyya
- 21 AN INTROSPECTION ON SOME ASPECTS OF INFRASTRUCTURE
L.C. Goyal
- 24 SIDRABONG CELEBRATES ITS CENTENARY
Amitabh Ray
- 26 GREENING OF COMMON LANDS: A PERSPECTIVE
C.R. Hazra & Dipankar Saha
- 28 ✓ HUMAN RIGHTS AND ENVIRONMENT
M.C. Mehta
- 33 WHAT ANGANWADI'S NEED MOST
Rajesh Jaiswal
- 35 ✓ COMBATING AIDS: NEED FOR MASS AWARENESS
Satyanarayana Pattnaik & Daljit Singh Bedi
- 38 COOPERATIVES AND DECENTRALISED PLANNING IN KERALA
Sasikumar M.V.
- 40 SPRINKLER IRRIGATION Vs SURFACE IRRIGATION: A CASE STUDY
P.S. Shekhawat & Dr. R.C. Sharma
- 41 INDIAN TEXTILES : TRADITION OF THE WORLD'S FINEST FABRIC
- 45 REVIEW ARTICLE
- 47 INDEX OF ARTICLES PUBLISHED IN 1997



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26th January, 1998

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Greening Of Common Lands: A Perspective

C.R. Hazra and Dipankar Saha

PERHAPS the most critical task facing Indian Agriculture is to feed a rapidly rising human and bovine population. During the fifties, intensive agriculture was promoted with a subsequent Intensive Agriculture District Programme (IADP) in sixties. In our efforts to increase the food, fodder and fuel output, land and soil resources have been subject to great stress and inappropriate land use has resulted in soil degradation—soil erosion, salinity and alkalinity, shifting cultivation and nutrient loss. With emphasis on quick results that have the certainty of being achieved, regions of difficult resource and production conditions have been neglected leading to inter-regional imbalances. Sustainability as an issue of inter-generational equity involves restoration and conservation of resources. The somewhat exploitative approach for enhancing productivity under favourable conditions has not provided much support to the resources conditions for growth. This has obviously resulted in inter-regional and inter-generational equity problem and sustainability. Keeping in view the existing paradigm of sustainable agriculture, one could see strong correspondence between these axioms and the goals of agroclimatic regional planning which has been initiated by Planning Commission in 1988 by dividing the country into 15 zones. The Central Plateau and Hills Region numbered as Zone 8 (Plateau Region with Dominance of Rainfed Agriculture) is richly endowed by nature but not properly used by man. The case studies of Zonal Planning Team helped us to visualise the impediments of sustainable natural resource regeneration and management in its 14

subzones. The present case study is a cumulative approach for greening a common land through village resource development in subzone No. 1 i.e. in Bundelkhand (U.P.).

Regional Features

The Bundelkhand region of Uttar Pradesh lies south of the river Yamuna and bounded by Madhya Pradesh on the other three sides. The region comprises five districts viz., Jhansi, Lalitpur, Jalaun, Hamirpur and Banda with a total geographical area of 29,520 km² and with a human and bovine population of 6.7 million and 4.6 million respectively (1991 census). Geologically, the whole region is occupied by gneiss. The terrain is undulating with rocky out-crops with considerable variation in soil types and most predominantly red and black. The climate is exclusively semi-arid where precipitation is low (900-1000 mm) and highly erratic. The evapotranspiration is quite high (1516 mm) and atmospheric aridity sets in by mid-September and continues till the next monsoon rains. Vegetation type is reflected through its southern and northern tropical dry deciduous forest which occupy 0.23 m ha which is only 8 per cent of the total geographical area. These include culturable waste or banjar land, non-culturable waste or 'parti' land and salt-affected land or 'usar' land owned by Gram Samaj (Village Society), which cover 0.7 m ha and are commonly used as grazing lands. Agriculture being a primary occupation, the cultivable area is 1.2 m ha i.e. 61.3 per cent of the total reported area. Districtwise it varies greatly from 49 per cent in Jhansi to 82 per cent in Jalaun. The predominant agricultural crops of this region are

sorghum, maize, millets, wheat and barley among cereals, pigeon pea, gram, lentil and black gram amongst pulses, sesame and potato among commercial crops.

Animal rearing occupies an important position in the region. There are about 2.36 m cattle, 0.93 m buffaloes, 1.05m goats, 0.21 m sheep, 0.10 m pigs and 0.006 m other animals. There are also 1.03 m poultry. The total livestock density varies from 103 to 173/km² in the region with 155 km² in Jhansi district.

Issues

Land use pattern (earlier and present type) and population coupled with unemployment and poverty has imposed a great pressure on the regional biotic and abiotic resources and resulted in heavy degradation. In addition the non-functioning of the traditional village institutions and the lack of national policies on common lands aggravated the degradation pattern quite fast during last few decades, which will increase further in future as trends depict. Keeping in view the trends, during the project initiation it has been realised that the community participation in the planning and implementation of the proposed greening programme of common lands would be essential. The developmental process must be ensured to have a partnership between the communities and project personnel with an agreement clearly setting out the obligations and benefits.

Accordingly, an approach to land management (privately owned degraded lands and common lands ranged from 36 to 63 ha and 20 to 340 ha respectively) by integrating different primary systems was adopted, with a thrust to redevelop the land and water resources on a micro-watershed basis.

Greening Network

The Agricultural Department of Uttar Pradesh has selected seven micro-watersheds in Kharaiya Nala situated 50 km away from Jhansi. A holistic

strategy of village resources development based on sound understanding of its ecology and local village communities was adopted by embracing

- institutions building,
- soil and water conservation measures,
- improved crop production technology,
- regeneration of hills/hillocks constituting village common lands to create much needed bioresource base, and
- creation of awareness for self-employment for rural poor and marginal farmers.

In each village, a Village Resource Management Committee (VRMC) has been constituted under the chairmanship of Gram Pradhan (Village Chief) with five members and the Asst. Soil Conservation Inspector as its Member Secretary. The VRMC has also been entrusted with the responsibility for motivating the village community to extend their cooperation in the protection of rehabilitated hills and also in their management.

The seven micro-watersheds (Tejpura, Gaharawa, Pachwara, Sizara, Kakwara, Ghurat and Siwabari) were extensively studied for physico-biological and socio-economical resources and generated data base. On the basis of these data and field surveys a treatment plan for each micro-watershed was developed in consultation with VRMCs.

The micro-watersheds were treated, starting from the crest of the hill slopes (8-30%) down to agricultural lands. The entire microwatershed area (5395 ha) was treated with soil and water conservation measures. Hill slopes were treated with staggered contour trenches each trench being 3 m long, 45 cm wide and 45 cm deep, for *in situ* moisture conservation. The distance within and between the trenches was 3 m. All agricultural lands were treated with soil

and moisture conservation measures such as contour bunding, submergence lands, and field bunds on contours to the extent possible. Wherever necessary as in the case of Tejpura micro-watershed, a diversion channel was constructed to guide high velocity run-off from hill/hillocks to seasonal streams.

In order to augment the income of village communities wherever surface water have been impounded fish culture have been initiated by restricting its benefit to the fishermen on concerned watershed.

To mitigate the problem of migration to urban areas, the rural poor and landless people have been given training for generating alternative source of employment, like basket making and plate making from locally available raw materials.

Structurally the project impact was measured in terms of (i) reduction in run-off water and sediment yield from hills/hillocks and wastelands, (ii) increase in ground water table, (iii) increase in crop productivity and cropping intensity; (iv) increase in forage and firewood production from field bunds and common lands, (v) change in livestock composition, and (vi) increase in use of cowdung as manure.

The functional details exhibit that the area treated with soil and water conservation measures, water harvesting, seeding of grasses and legumes, planting of trees and shrubs and protection alongwith their respective cost in the eight micro-watersheds were set out. Interestingly, the total cost of afforestation and pasture development in 665.23 ha of common lands (hills and hillocks) for a period of three years was Rs. 3230 thousand (US \$92,000). In return it has been observed that during the three year period, the discounted value of the forest produce (forage, firewood seeds of grasses,

legumes and leaves) was Rs. 2840 thousand (US \$ 81,000). A comparison of the total discounted expenditure incurred on regeneration of common lands and the discounted income generated therefrom shows that the entire expenditure incurred on greening was more or less recovered within a period of three years.

Additional benefits coming out from the regeneration network of common land can be viewed as:

- increase in crop productivity in lands adjoining the foothills which were otherwise being rendered infertile due to scree deposition from hill slopes,
- increase in milk production due to sustained supply of fodder,
- fish production as a result of impounding of run-off water which was being lost otherwise; and
- creation of opportunity for self-employment of the unemployed members of 412 families in basket making, the discounted value to the base year 1990-91 was Rs. 2275 thousand (US \$ 65,000).

The above micro-watersheds developmental network has come out successfully as a cost-effective model for greening barren hills and hillocks constituting common lands through village resource utilization and development. This network cannot be taken as a granted model approach but as a symbolical pilot project which can be adopted in the same agroclimatic features or in different situations with site specific ecofeasible modifications for the workers engaged in greening rangelands in regional or global context. It has also clearly demonstrated the existence of upland-lowland interaction in the Vindhyan ecosystem and that development of one in isolation of the other is not possible.

The next steps in the successful greening process will depend upon these key approaches:

(Contd. On Page 32)

3(3) of the Environment Protection Act, 1986 and confer on the said Authority all powers necessary to protect the fragile coastal areas. The Authority is to be headed by a retired High Court Judge and to consist of technical experts to be appointed by the Government. The authority is to enforce the 'Precautionary Principle' and the 'Pollutor Pays Principle'.

c) The agricultural lands, salt pans, mangroves, wetlands, forest lands, land for common village purposes and land meant for public purposes, cannot be converted for aquaculture.

d) No aquaculture industry/ponds can be constructed within 1000 metres of Chilka Lake and Pullicat Lake.

Besides, the Supreme Court has imposed pollution fine on polluters and has provided compensation to the villagers affected by pollution.

These are only a few of the cases

where the Supreme Court has acted as a saviour of environmental rights. There are a number of other Supreme Court and High Court Judgements which have made significant contribution to the cause of environment. This has been so because the Courts are seized of their role as protectors of human rights. Moreover, they are seized of the special feature of the environmental rights which renders them more fundamental than most other civil rights. That feature is the irrevocability of their breach. We can still more easily reform most of our malfunctioning human institutions and set right most injuries stemming therefrom, but it is not possible to restore a polluted river or a denuded mountain to its pristine glory and bring back the rain forest and rare species that have disappeared from many parts of the world due to man-made ecological disasters.

Encouraged by the judgements,

already the environmental groups all over the country are entering into legal battles on various environmental issues, having realised the potential of the use of law in this field.

However, neither the courts, nor the government alone can protect environment unless there is a strong people's movement at the grassroot levels supporting the environmental issues. This can only become possible if people become aware of their environmental rights and duties. To achieve success, efforts to create an environmental awareness and encourage public participation, will play a major role in crystallising pro-people and pro-environment movements.

The author is the winner of Magsaysay award for public service for 1997. The article is based on the Loveraj Kumar memorial lecture organised the Society for Promotion of Wastelands Development held in Delhi last year.

(Contd. From Page 27)

- (i) integrated development of common lands on a watershed basis;
- (ii) community participation and close collaboration between Forest, Agriculture/Soil Conservation Departments and NGO's; and
- (iii) substantial redefinition of natural forest management which gives emphasis to the ecological health of the common lands as also providing benefits to the local village communities.

Lessons

The lessons that came out from the project experience for greening the common lands include:

- Greening of common lands should form part of an integrated village resource development programme, as only this can ensure active involvement and participation of village communities and the sustainable use of regenerated biomass.
- Adoption of target oriented planning

which ensures that plans are based on site-specific conditions and priorities.

- Small ruminants of the poor and the landless are reared on free ranging leading to serious damage to vegetation. It must be controlled by generating alternative income sources and manage the transitional economy.
- Vegetative rehabilitation and management of upland/common lands in the watersheds include protection of root stock of indigenous species.
- The need for protection of vegetation in the uplands and consequent improvement of environment was not reflected in their priority as much as the need for augmenting surface and ground water resources for irrigating their crops, improved package of crop production technology and other avenues of employment.

- The pattern of sharing benefits generated as a result of vegetative rehabilitation of land has to be worked out in close consultation with VRMCs and this arrangement should be accepted by the village communities.

The experience of the above developmental programmes has shown that village common lands on the hillocks (rangelands) can be rehabilitated in adopting appropriate soil and moisture conservation measures and regeneration of grasses, shrubs and tree species from the existing root stock which costs merely Rs. 4842 (US \$ 138) per hectare. The overall range situations of Bundelkhand is quite similar to that of above used common lands and/or rangelands which can be rehabilitated in a cost-effective manner too. □

The authors are Project Co-ordinator and Scientist respectively with All India Co-ordinated Project for Research in Forage Crops, ICAR.